

REMARKS

Claims 1, 2 and 4-8, 11-23, 25, 27, 28, 30 and 47 are pending in the subject application. Claims 1 and 47 are amended. Claims 3, 9, 10, 24, 26, 29 and 32-46 have been cancelled. Claims 15-23, 25, 27, 28, 30 and 31 have been withdrawn from consideration.

Claims 1, 2, 4-8 and 11-14 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,114, 584 ("Sheckler et al."), in view of JP 62-2-1642 ("JP '642"). This rejection is respectfully traversed.

Sheckler et al. discloses a filter body comprised of at least about 75 wt.% of molecular sieve material and from about 9 to about 20 wt.% of nylon. All pores of said molecular sieve are smaller than about 4 Angstroms. This pore size definition relates to the primary pore volume as recited in the present claims. In Sheckler et al., no figures or information are given for the secondary pore volume. Nevertheless, there are statements in Sheckler et al. about porosity, namely in column 9, lines 40-54, and example 1 column 12, lines 26 to 30, where a pressure drop over a shaped body is discussed. In particular, ASTM test 778-82 referenced in Sheckler uses a gas flow rate of 100 standard cubic feet per hour applied to a 0.5 inch thick disc of the filter body, which results in a measured pressure drop of 5 inches (water column) to about 20 inches (water column). This corresponds to a quite open secondary pore structure with large macroscopic pores allowing substantial amounts of fluid travelling through the filter body from one end to the other. This observation is supported by the Abstract describing bodies with surprisingly low densities of "about 10 to about 25 grams per cubic inch," which corresponds to 0.61g/cm^3 to 1.52g/cm^3 . Where a porous body possesses a density below 2g/cm^3 , a macro-porous structure is present (i.e., macropores are larger than 10 microns) allowing readable pressure drops over such bodies.

In comparison, the porous body of the present invention possesses a meso-porous structure does not allow for passage of fluid or gas through the material (see attached drawings). The corresponding bodies would have an unlimited pressure drop. The presently disclosed bodies in the present application possess, in addition to

the primary pore volume of the porous functional solid, a secondary pore structure that provides desirable absorption properties. The porous body of the present invention will adsorb moisture without the requirement of flow through channels as long as the adsorbent has access to the secondary pore volume. The secondary pore volume recited in claim 1 is formed with pores having diameters of 4 to 3000 μm , i.e., only small interstices, which provides dense bodies having increased water pick up. There is no disclosure in Sheckler et al. regarding secondary pore volume.

Moreover, Sheckler et al. discloses an adsorbent body having particle sizes of the molecular sieves greater than 250 μm (col. 4, lines 21-31). Because large particle sizes lead to large voids between arrangements of particles, this also supports the presence of large macro-porous secondary pore structures in the Sheckler et al. adsorbent body, i.e., of channels allowing a fluid to pass completely through the structure. This is desirable when the adsorbent body requires fluid to pass through it, as in the case of a filter body.

Thus, Sheckler et al. teaches the artisan to prepare adsorbent bodies having large pores so as to accommodate high flow through properties. Thus, the disclosure of Sheckler et al., would not provide either the teaching or the motivation for the artisan to prepare an adsorptive body having the secondary pore volume recited in the present claims, especially since Sheckler et al. teaches the use of flow through filter bodies.

The Examiner bears the burden of establishing a *prima facie* case of obviousness, *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995), *In re Rijckaert*, 9: F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ 2d 1443, 1444 (Fed. Cir. 1992). Only if this burden is met does the burden of coming forward with rebuttal argument or evidence shift to the applicant. *Rijckaert*, 9 F.3d at 1532, 28 USPQ2d at 1956. When the references cited by the examiner fail to establish a *prima facie* case of obviousness, the rejection is improper and will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

The combination of elements in a manner that reconstructs the applicant's invention only with the benefit of hindsight is insufficient to present a *prima facie*

case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself. *Diverstech Corp v. Century Steps, Inc.*, 850 F.2d 675, 678-79, 7 USPQ2d 1315, 1318 (Fed. Cir. 1988); *In re Geiger*, 815 F.2d 686, 687, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1147, 227 USPQ 543,551 (Fed. Cir. 1985).

In the instant case, Applicants respectfully submit that the June 1, 2012, Office Action does not set forth any statements of record to supplement the silences of the cited reference. Moreover, there has been no suggestion or motivation set forth to this Office Action that would lead one of ordinary skill in the art to the claimed invention. In particular, on page 3 of the June 1, 2012, Office Action it is stated that:

For claims 1 and 2, the pores of molecular sieves in Sheckler's reads on the "primary pore volume of the porous functional solid", and the pores of the porous filter body reads on the "secondary pore volume of the adsorbing material". Sheckler is silent about the diameter range of the "secondary pores" of the polymer matrix in the porous filter body. However, since Sheckler teaches the same subject matter for the same end use (adsorbent filter body), a workable secondary pore diameter of the polymer matrix is deemed to be either anticipated, or an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to meet the same end use requirements of various applications. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As above-mentioned, the Office Action states that Sheckler et al. is completely silent regarding secondary pore volume of the adsorbent body described therein. Moreover, one of ordinary skill in the art, after reviewing of Sheckler et al., would not have been motivated to form the instantly claimed secondary pore volume in the adsorbent body described therein since the teachings of Sheckler et al. lead one to macroporous or large channels of pore sizes so as to enable filter bodies having high flow through properties. In addition, there are no teachings in Sheckler et al. that would enable the artisan to obtain adsorbent bodies having the instantly claimed pore sizes.

JP '642 relates to a deodorizing material that adsorbs foul smelling substances in a refrigerator (page 8). JP '642 does not relate to a filter body for use with refrigerant fluids as described in Sheckler et al. One of ordinary skill in the art, after reviewing the teachings of Sheckler et al. and JP '642 would not have combined these teachings and arrived at the presently claimed invention. The properties needed for deodorizing an inside of a refrigerator is completely different from an in line filter body used in desiccating refrigerant fluids in a closed refrigerating system. Moreover, the Examples in JP '642 indicate that smaller pores are not desirable. See comparison of Control 1 and Embodiment 1 where the main difference in material is the smaller maximum pore size. The adsorption results for Control 1 are much worse than Embodiment 1. Thus, both JP '642 and Sheckler et al teach against the use of small pores in an adsorbent body, especially since Sheckler et al. teach that high flow through properties are desirable. The artisan would not have utilized the small pores as recited in the present claims when a flow through filter is desired.

Thus, a *prima facie* case of obviousness over Sheckler et al. in view of JP '642 has not been set forth in the Office Action.

Accordingly, it is submitted that the subject matter of claims 1, 2, 4-8 and 11-14 are not rendered obvious by Sheckler et al. in view of JP '642. Applicants respectfully request withdrawal of this rejection.

In view of the above remarks, Applicants earnestly solicit the withdrawal of the rejections set forth in the June 1, 2012 Office Action and notification to that effect in the form of a Notice of Allowability.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William D. Bunch". The signature is fluid and cursive, with the first name "William" being more prominent than the last name "Bunch".

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Dated this 3rd day of December 2012.

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